Addendum No. 4
To
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IMPACTED MATERIALS PLACEMENT PLAN ON-SITE DISPOSAL FACILITY

Specialized Placement Plan for Category 3 Transite Debris

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FINAL DRAFT

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To

Impacted Material Placement Plan

On-Site Disposal Facility

Specialized Placement Plan for Category 3 Transite Debris

In accordance with Section 8, Article 8.6.1 of the Impacted Material Placement (IMP) Plan, Revision 0, dated January 1998 for the On-Site Disposal Facility (OSDF), a specialized placement plan is required to be prepared for "materials either nominally larger than the physical criteria for the OSDF..." or "not reasonably anticipated by currently identified categories...". This specialized placement plan provides requirements and two placement options for placement of Category 3 transite debris which does not meet the sizing requirements of Category 3 materials in Section 5, Article 5.2 of the IMP Plan. The debris will consist of transite panel pieces, which are broken during impacted materials excavation and/or demolition. The broken pieces of transite debris will be bagged or wrapped to reduce the risk of friability during placement.

PLACEMENT REQUIREMENTS

Placement of broken Category 3 transite debris (herein after referred to as transite debris) which does not meet the sizing criteria of the IMP Plan and broken during impacted materials excavation and/or demolition shall be performed in accordance with Fernald Environmental Management Project (FEMP) radiological safety procedures, the IMP Plan, including fugitive dust control and storm water runoff control, and the Contractor's approved Safe Work Plan. The Contractor's Safe Work Plan shall be revised to include requirements for placement of transite debris as described in this Addendum No. 4. In addition to the requirements described in the above said documents, transite debris shall be placed in a manner protective of the health and safety of OSDF personnel and the public, utilizing the As Low As Reasonably Achievable (ALARA) approach and shall meet the OSDF performance criteria as stated in the Design Criteria Package for the OSDF.

PLACEMENT OPTIONS

Most of the transite debris is expected to be generated during impacted materials excavation and as buildings are demolished. Additionally, some transite debris may be

generated in small quantities as other remediation activities are performed. To provide flexibility, two options are specified herein for placement of transite debris. These options are specified to minimize radiological potential exposure to personnel and equipment, limit dust generation, control storm water runoff, and handle and place the transite debris in a safe manner. The two placement options are:

- Option 1 - Placement by Grid Method
- Option 2 - Placement by Trenching Method

Selection of the placement option will be made by the Construction Manager based on the quantity of transite debris that is available for placement and availability of a required grid.

Option 1 - Placement by Grid Method

Transite debris shall be placed by grid method when an estimated quantity of debris for placement is equal to or more than that required to fill half a grid (approximately 220 bcy or more) or when a previously placed minimum 3 ft (0.9 m) thick Category 1 grid is not available for placement by Option 2 trenching method.

A minimum of two (2) working days prior to commencement of transite debris placement by grid method, the Construction Manager will select and approve a grid(s). The approved selected grid(s) shall meet the following requirements:

- Grid shall not be located with 100 ft (30m) laterally adjacent to a Category 4 or Category 5 grid within the same horizon.
- Grids with transite debris placed by the Grid Method shall not be laterally adjacent to each other within the same horizon.
- Grid with transite debris placed by the Grid Method and grid with transite debris placed by the Trenching Method shall not be adjacent to each other in the same horizon.
- Minimum thickness of Category 1 material under transite debris shall be 2 ft (0.6m) or the intervening horizon of Category 1 impacted material, as described in the IMP Plan, whichever is greater.
- Transite debris shall not be placed directly on previously placed Category 2 through 5 impacted material, protective layer, or select impacted material layer.

- Transite debris shall not be placed within 6 ft (1.8m) under the select impacted material for the cap system
- Only one (1) lift of transite debris shall be placed in each grid.

Transite debris placement in grid(s) shall be in accordance with the following requirements and general procedures and as shown on Figures 1, 2 and 3.

General procedures include:

- Preparation of the grid
- Debris placement
- Initial and additional lifts of Category 1 material

Requirements for each procedure are as follows:

Preparation of the Grid: After a grid is selected and approved, perimeter berms shall be constructed on three sides of the grid, as shown on Figure 1. These berms shall be constructed from Category 1 material; they shall be 24 in (600 mm) high and have a minimum top width of 10 ft (3 m). The berms shall be placed and compacted in 12 in (300 mm) to 15 in (375 mm) loose lifts in accordance with the IMP Plan. An additional berm shall be constructed (with the same requirements of the perimeter berms) in the middle of the grid to provide access for a trackhoe (or other equipment) to spread and compact the debris. Until all transite debris placement in the grid is complete, the fourth side shall be left open for truck entrance and exit to and from the grid. The fourth side of the perimeter berm shall be constructed after completion of transite debris as shown in Figures 2 and 3. The berms shall be compacted to meet at least 90 percent of the standard Proctor maximum dry density as described in Section 7.4.2 of the IMP Plan. Compaction shall be tested in accordance with the IMP Plan.

Debris Placement: After the grid has been prepared, trucks transporting transite debris shall dump material at the furthest end of the grid. Transite debris shall be spread lightly and tamped by the bucket of a trackhoe (or with an optional tamping plate attachment) to achieve a maximum loose lift thickness of 18 in (450 mm) ± 3 in (75 mm). The trackhoe operator shall be careful not to break the placed bags or wrapping of the debris. The trackhoe shall be of sufficient size and reach and be situated in such a way to reach the

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transite debris. Compaction, other than tamping from a trackhoe bucket (and tamping plate attachment), shall not be performed directly on the transite debris. In accordance with the ALARA concept, equipment operators and other personnel shall avoid contact with transite debris. Fugitive dust and storm water runoff controls shall be in accordance with the IMP Plan. Water trucks and/or water hoses shall be available at the location of placement activities.

Initial and Additional Lifts of Category 1 Material: As the debris placement progresses, an initial 15 in (375 mm) ±3 in (75 mm) loose lift of Category 1 material (soil and soil-like material) shall then be placed on top of the transite debris by the end of each working day. The initial lift shall be compacted with a minimum of four one-way passes of a self-propelled double drum roller compactor, a smooth drum vibratory roller or other compaction equipment approved by the Construction Manager. No compaction testing will be performed on the initial lift above the transite debris. As shown in Figures 2 and 3, the fourth side of the perimeter berm will be constructed after transite debris placement is completed. An additional 12 in (300 mm) ±3 in (75 mm) loose lift of Category 1 material shall be placed above the initial lift. Total compacted thickness of Category 1 material placed above the transite debris, including the initial lift, shall be a minimum 2 ft (0.6m) thick or at least as thick as the intervening horizon described in the IMP Plan, whichever is greater. See attached Figure 3. The Category 1 lift(s) above the initial lift shall be compacted to meet at least 90 percent of the standard Proctor maximum dry density. Compaction of the additional lift(s) shall be tested in accordance with the IMP Plan.

Option 2 – Placement by Trenching Method

Transite debris shall be placed by trenching method when the estimated quantity of debris will be less than the quantity required to fill a half grid (less than approximately 220 bcy) and a previously placed minimum 3 ft (0.9 m) thick Category 1 grid is available for placement of the transite debris.

A minimum of two (2) working days prior to commencement of transite debris placement by trenching method, the Construction Manager will select and approve a previously placed minimum 3 ft (0.9 m) thick Category 1 grid. The approved selected grid(s) shall meet the following requirements:

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- Grid shall not be located within 100 ft (30m) laterally adjacent to a Category 4 or Category 5 grid within the same horizon.
- Grid with transite debris placed by the Grid Method and grid transite debris placed by the Trenching Method shall not be adjacent to each other in the same horizon.
- A trench for transite debris shall not be excavated in previously placed Category 2 through 5 impacted material, protective layer, or select impacted material layer.
- Grids with transite debris trenches shall not be laterally adjacent to each other within the same horizon.
- Transite debris shall not be placed within 6 ft (1.8m) under the select impacted material for the cap system
- Only one (1) lift of transite debris shall be placed in each grid
- Minimum thickness of Category 1 material under transite debris trench excavation shall be 2 ft (0.6m) or the intervening horizon of Category 1 impacted material, as described in the IMP Plan, whichever is greater.

Transite debris placement in a trench shall be in accordance with the following requirements and general procedures and as shown on Figure 4.

General procedures include:

- Trench Excavation
- Debris Placement
- Initial and Additional Lifts of Category 1 Material

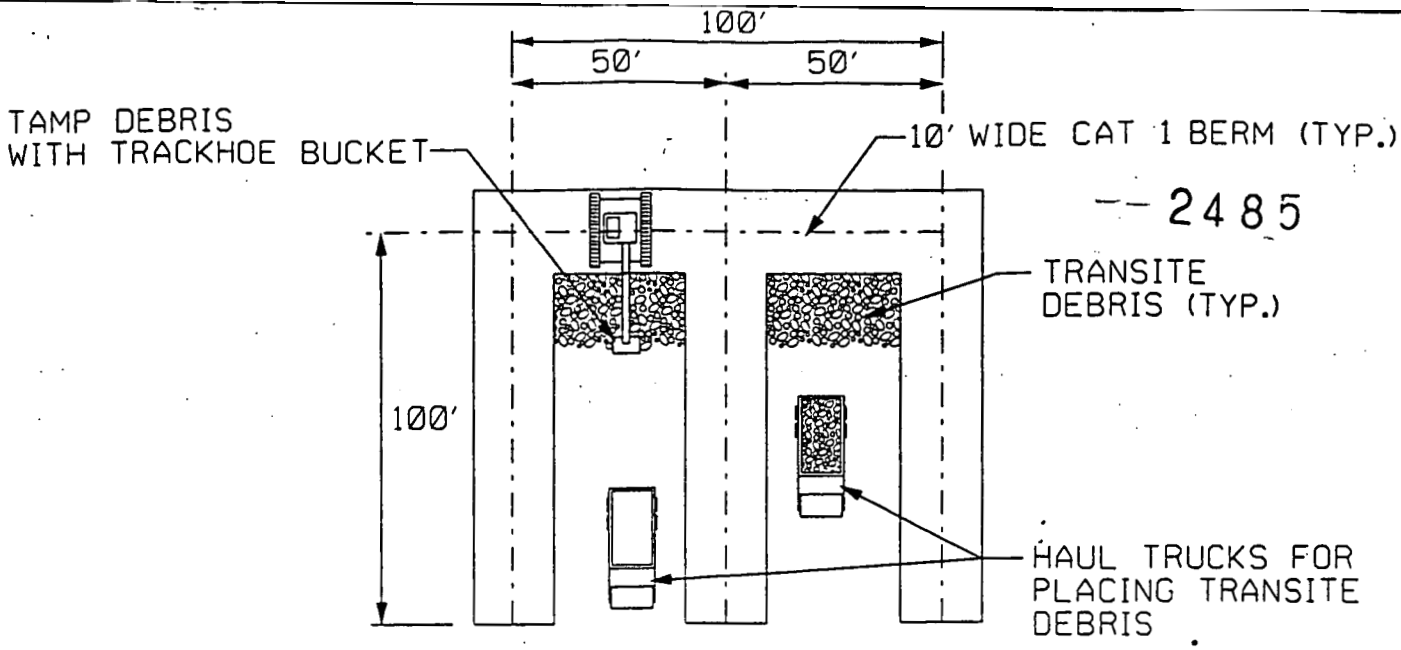
Requirements for each procedure are as follows:

Trench Excavation: After a grid(s) is selected and approved, a trench (or trenches) shall be excavated as shown on Figure 4. Each trench shall be a minimum of 3 ft (0.9 m) deep and a maximum of 4 ft (1.2 m) deep and between 8 ft (2.4 m) and 12 ft (3.6 m) wide. A minimum 6 ft (1.8 m) distance shall be maintained between top of the side slopes of the adjacent trenches. One end of the trench shall be graded to a minimum 5H:1V ramp (subject to approval by FDF Safety Engineer) for truck access into the trench. The maximum trench length shall be approximately 70 ft (21 m) and shall be limited by the maximum length that can be excavated in one grid and still provide adequate access to

enter and exit the trench. The Category 1 material excavated from the trench shall be stockpiled a minimum 6 ft (1.8 m) from the top of the side slopes of the trench and shall be used later for initial and additional lifts of Category 1 material over transite debris.

Debris Placement: After the trench is excavated, trucks transporting transite debris shall back down the ramp and begin dumping material at the furthest end of the trench. Transite debris shall be lightly spread and tamped by the bucket of a trackhoe (or with an optional tamping plate attachment) to achieve a maximum loose lift thickness of 18 in (450 mm) ±3 in (75 mm). The trackhoe operator shall be careful not to break the placed bags or wrapping of the transite debris. Compaction, other than tamping from a trackhoe bucket (or optional tamping plate attachment), shall not be performed directly on the transite debris. Equipment operators and other personnel shall avoid contact with transite debris in accordance with the ALARA concept. Fugitive dust and storm water runoff controls shall be in accordance with the IMP Plan. Water trucks and/or water hoses will be available at the location of the placement and compaction activities.

Initial and Additional Lifts of Category 1 Material: After transite debris is placed in the trench and compacted, it shall be covered with an initial 15 in (375 mm) ±3 in (75 mm) loose lift of Category 1 material by the end of each working day. The initial lift shall be compacted with a minimum of four one-way passes of a self-propelled double drum roller compactor, a smooth drum vibratory roller or other compaction equipment approved by the Construction Manager. No compaction testing will be performed on the initial lift above the transite debris. An additional 12 in (300 mm) ±3 in (75 mm) loose lift(s) of Category 1 material shall be placed above the initial lift. Total compacted thickness of Category 1 material placed above the transite debris, including the initial lift, shall be a minimum 15 in (375 mm) as shown on attached Figure 4. The Category 1 lift(s) above the initial lift shall be compacted to meet at least 90 percent of the standard Proctor maximum dry density. Compaction of the additional lift(s) shall be tested in accordance with the IMP Plan. Category 1 material shall subsequently be placed in accordance with the IMP Plan to a minimum thickness of 2 ft (0.6m) or the intervening horizon as described in the IMP Plan, whichever is greater; as shown on Figure 4.



PLACING TRANSITE DEBRIS IN GRID

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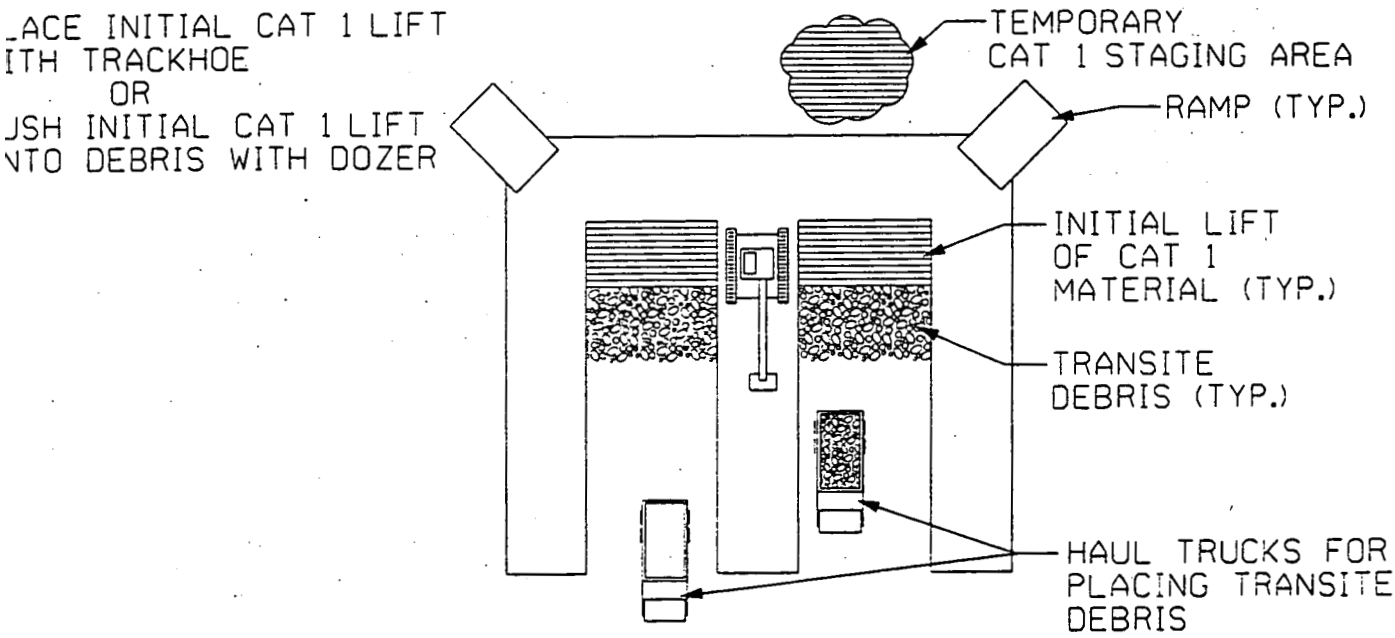

COVERING TRANSITE DEBRIS

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FIGURE 1
TRANSITE DEBRIS PLACEMENT
OPTION 1 - GRID METHOD
PLAN VIEW
SHEET 1 OF 3

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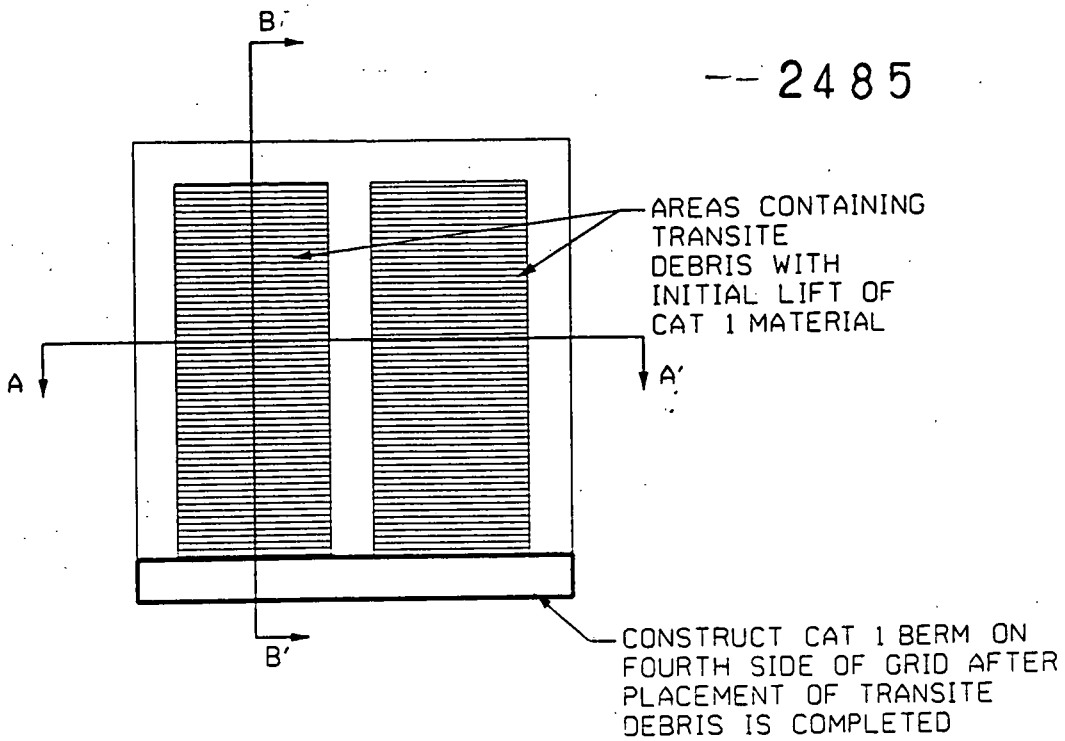

COMPLETION OF TRANSITE DEBRIS GRID
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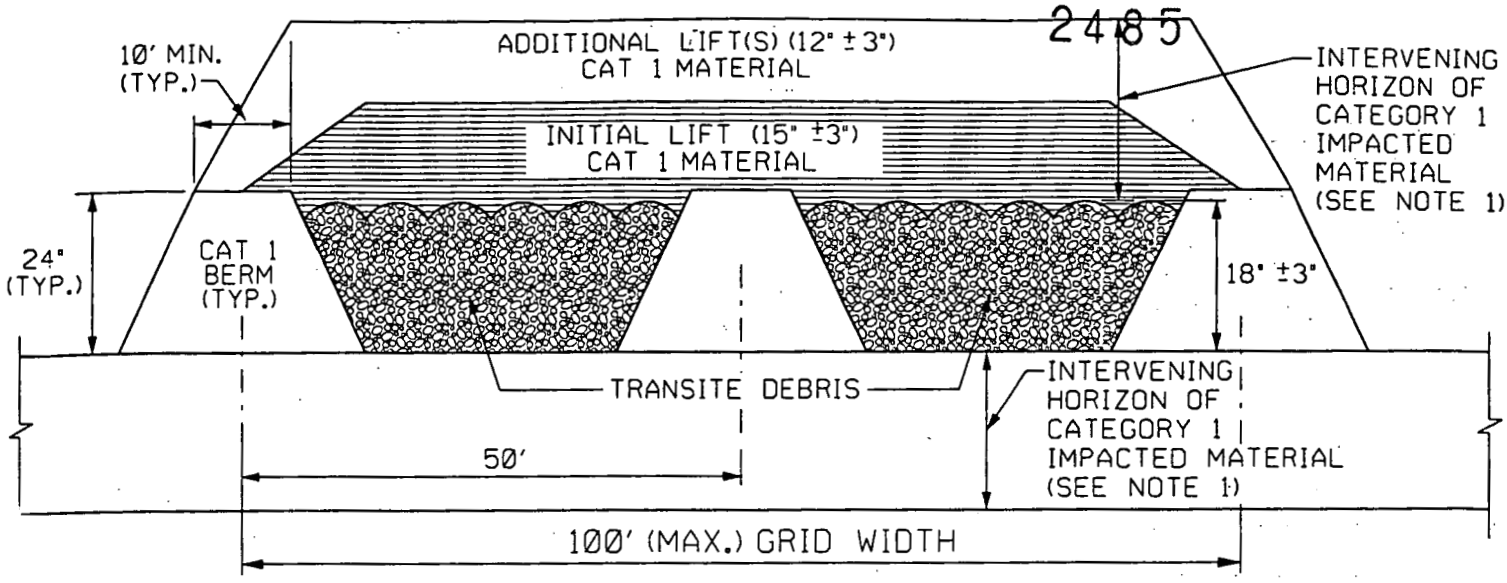
NOTES: SEE FIGURE 3 (SHEET 3 OF 3) FOR AA' AND BB' CROSS SECTIONS.

FIGURE 2
TRANSITE DEBRIS PLACEMENT
OPTION 1 - GRID METHOD
PLAN VIEW
SHEET 2 OF 3



SECTION A-A'

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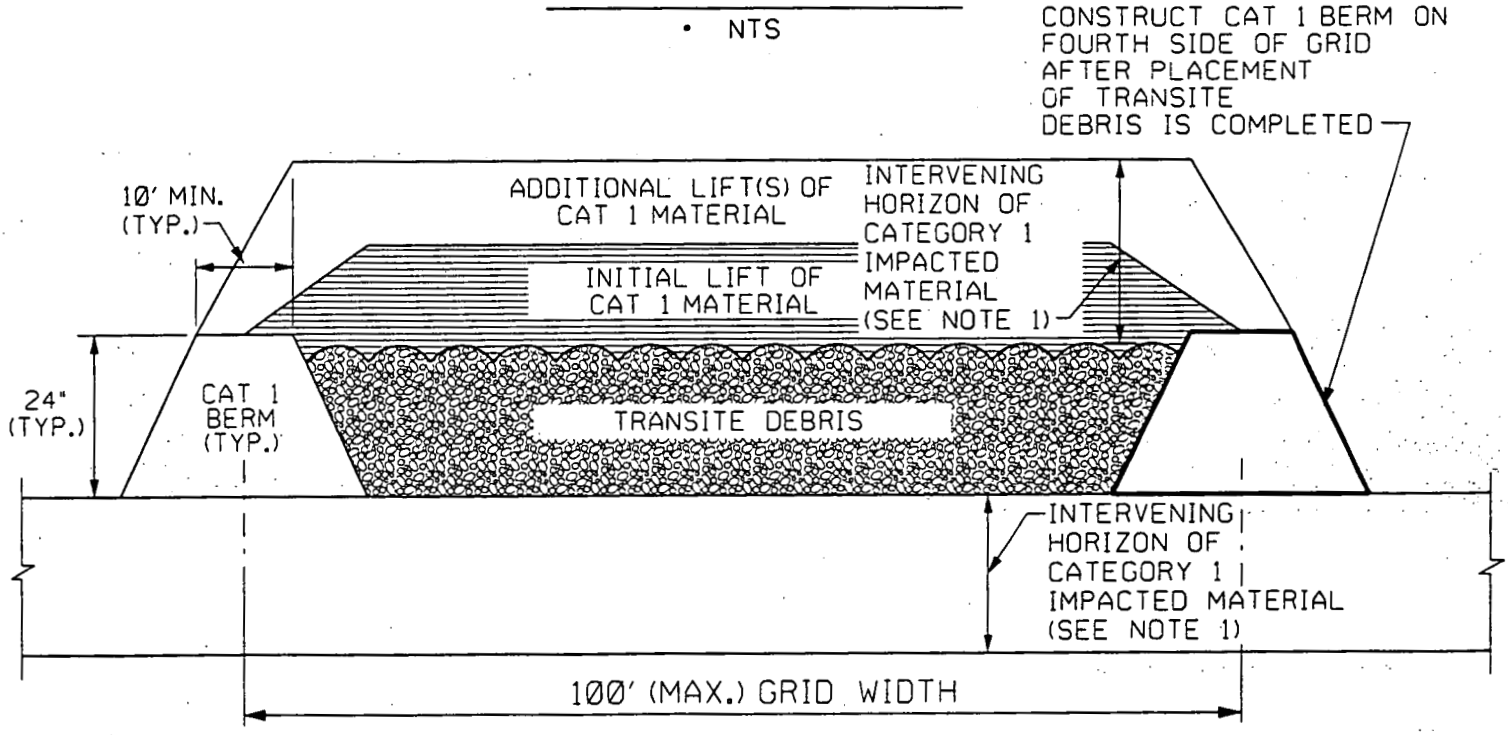

NOTE: FOR PLAN VIEW SEE FIGURE 2 (SHEET 2 OF 3)

SECTION B-B'

NTS

NOTES:

1. COMPACTED THICKNESS OF MINIMUM 2 FEET OR THICKNESS OF INTERVENING HORIZON OF CATEGORY 1 MATERIAL AS DESCRIBED IN IMPACTED MATERIAL PLACEMENT PLAN; WHICHEVER IS GREATER.

FIGURE 3
TRANSITE DEBRIS PLACEMENT
OPTION 1 - GRID METHOD
CROSS SECTIONS
SHEET 3 OF 3

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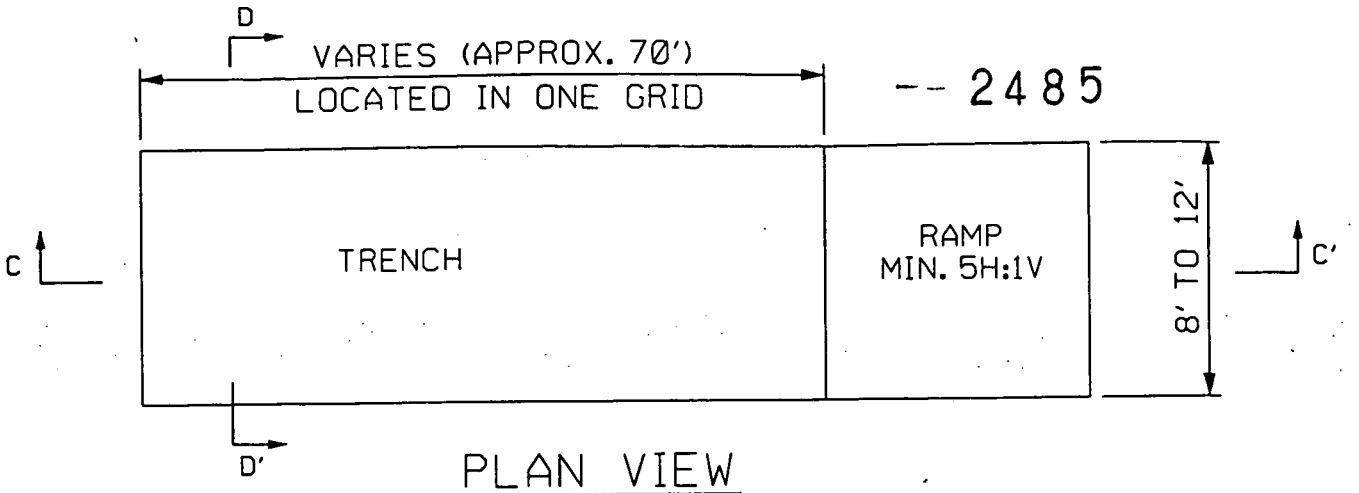

PLAN VIEW
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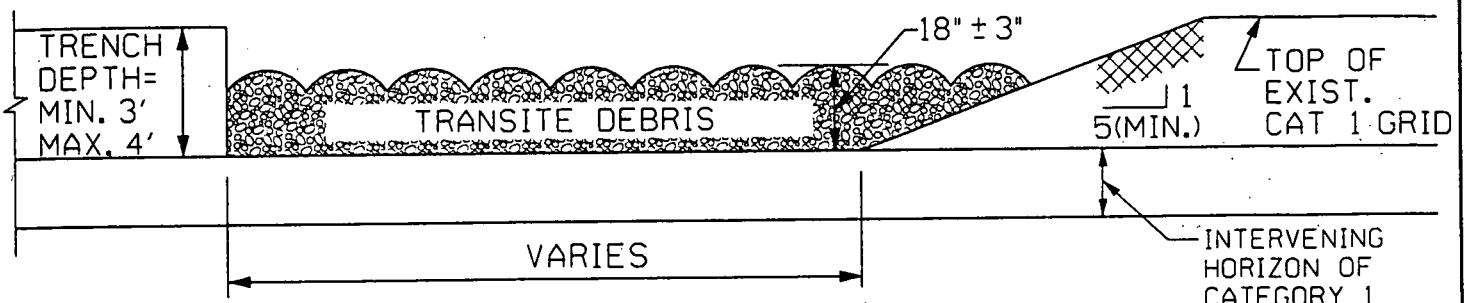

SECTION C-C' - DEBRIS PLACEMENT
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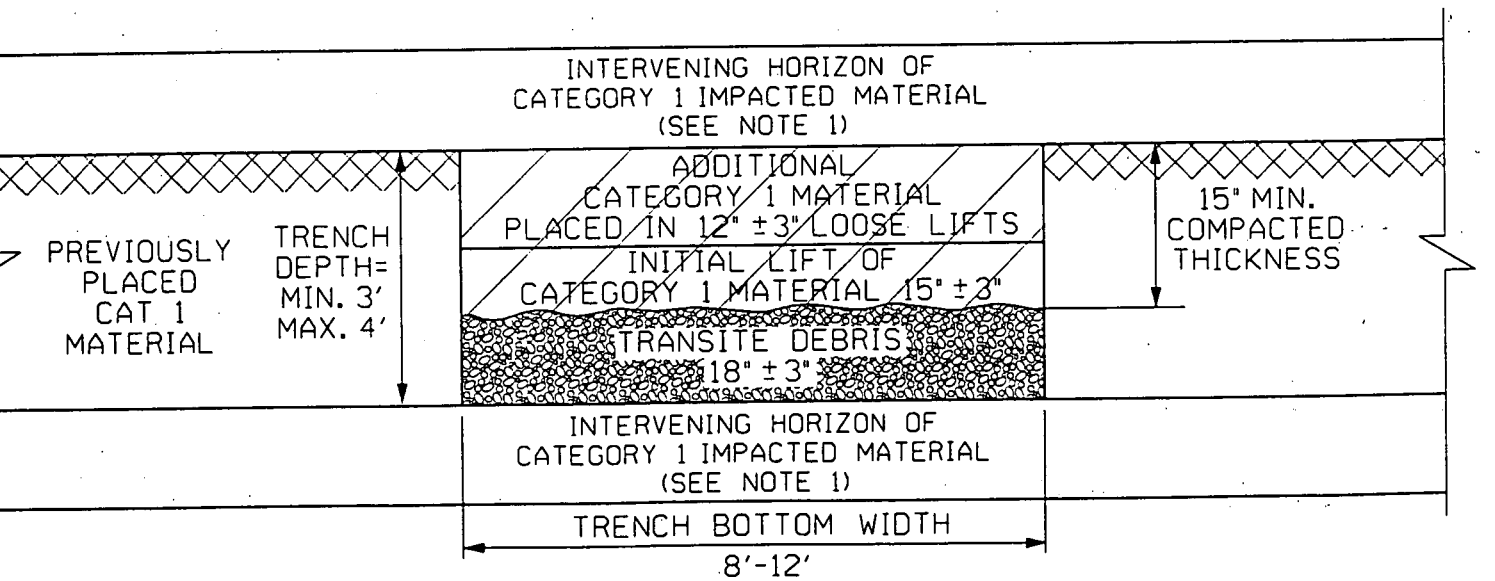

SECTION D-D'
PLACEMENT OF INITIAL AND ADDITIONAL LIFT(S)
NTS

NOTES:

1. COMPACTED THICKNESS OF MINIMUM 2 FEET OR THICKNESS OF INTERVENING HORIZON OF CATEGORY 1 MATERIAL AS DESCRIBED IN IMPACTED MATERIAL PLACEMENT PLAN; WHICHEVER IS GREATER.

FIGURE 4
TRANSITE DEBRIS PLACEMENT
OPTION 2 - TRENCHING METHOD
SHEET 1 OF 1

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